

## Compensation

### Definitions

Based upon a theory that smoking is nicotine-taking

- "Changes in smoking behavior contingent on and in correspondence with *an alteration in nicotine delivery*" (McMorrow et al., 1983)
- "That all smokers achieve a specified level of nicotine in their blood, regardless of the FTC nicotine yield of cigarette smoked" (Pritchard & Robinson, 1996)

Based upon a theory that smoking is chemical(s)-taking

- "Modifications in smoking behavior which enable the smoker to derive as much of constituents from low and high yield cigarettes" (Hill et al., 1982)
- "...That smokers compensate [adjust] behaviorally in one way or another the decrease in smoke yield in order to obtain the individually desired amount of nicotine or other smoke constituents" (Baettig et al., 1982)
- "In qualitative terms, compensation is the change in smoking behaviour in order to adjust (or compensate) for a different mainstream smoke yield of cigarette smoked currently compared to the cigarette smoked previously." (restricted to switching: "...deals with the question of whether switching to cigarette brands with different smoke yields is associated with a change in smoke uptake proportional to the change in machine-derived yields"; Scherer, 1999;)

### Behavioral changes

All the definitions listed above predict that, behaviorally speaking, some of the followings should be evident.

Note: whether or not smoking is nicotine-taking and/or other chemical(s)-taking would be beyond the scope of "compensation".

1. Selection of the brand ("market share") would be proportional to yields.
2. Behavioral parameters which can modify smoke uptake, should be in the direction listed below.

	Lower-yield smoker	Switched to lower yield
Number of cigarettes per day	larger	increase
Butt length	shorter	decrease
Number of puffs per cigarette	larger	increase
inter-puff interval	shorter	decrease
inter-cigarette interval	shorter	decrease
Puff volume/duration	larger	increase
Inhalation volume/duration	larger	increase
Blocking of filter vents	present	"intense"
Time after the last cigarette	longer the interval, more	"intense"

- How the smoker will change the above parameters or the combination of the above parameters in order to achieve certain level of biological uptake would be impossible to predict only by behavioral measurement according to yields.
- By the above definitions, the existence of "compensation", i.e., "net result" of behavioral changes, can only be determined after the precise biological uptake is measured (Leyden's team)